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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/743,437	12/23/2003	Hiroto Sasaki	Q78963	8137
23373 7590 07/18/2008 SUGHRUE MION, PLLC 2100 PENNSYLVANIA AVENUE, N.W. SUITE 800 WASHINGTON, DC 20037				
EXAMINER				
LIN, JAMES				
ART UNIT		PAPER NUMBER		
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/743,437

Applicant(s)

SASAKI ET AL.

Examiner

Jimmy Lin

Art Unit

1792

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 May 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-19 and 21-31 is/are pending in the application.
- 4a) Of the above claim(s) 14-19 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2-13, 21-29 and 31 is/are rejected.
- 7) ☒ Claim(s) 30 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/S508)
Paper No(s)/Mail Date 5/22/08
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 5/22/2008 has been entered.

Examiner's Note

2. The specification defines "physical development" as the deposition of metal particles on nuclei of metal or metal compound by reduction of metal ions such as silver with a reducing agent (pg. 33, lines 11-14).
3. The specification defines "does not substantially have physical development nuclei" as the existence ratio of the physical development nuclei in the light-transmitting portion to be in a range of 0 to 5% (pg. 40, lines 11-14).

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claim 23 recites the limitation "silver halide" in line 2. There is insufficient antecedent basis for this limitation in the claim. This limitation will be interpreted to be the silver salt of parent claim 6.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 2-7, 9, 12, 21-23, 25-29, and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Marutsuka (U.S. Publication 2001/0015279) in view of Takaoka et al. (JP 2000-149773).

Marutsuka discloses a method of forming a transparent electromagnetic radiation shield for placement in front of a display device to shield the viewer from electromagnetic radiation while enabling the display to be viewed therethrough (abstract). The radiation shield film comprises a patterned layer of a conductive material, such as metal [0061],[0065]-[0066].

Marutsuka does not explicitly teach that silver salt containing layer is exposed and developed to form a metal silver portion and a light-transmitting portion, wherein the silver salt-containing layer contains Ag and a binder and has an Ag/binder volume ratio of 1/4 or higher. However, Takaoka teaches a method of forming a patterned conductive layer using a silver salt-containing layer (abstract). The silver-salt containing layer is exposed and then developed via a development technique used for silver salt photographic films so as to form a metal silver portion. The metal silver portion is then subjected to physical development to form a conductive portion [0004]-[0005]. The reaction of the silver halide is carried out in a gelatin binder, all of which is contained in a sensitization layer. The sensitization layer can contain 90 wt% of silver halide (i.e., about an Ag/binder volume ratio of 6.45/10 or 0.645 based on 90 wt% AgBr and 10 wt% gelatin) [0012]. Because Takaoka teaches an operable method of forming patterned metal films, it would have been obvious to one of ordinary skill in the art at the time of invention to have used the metal forming process of Takaoka in the process of forming the patterned conductive film of Marutsuka with a reasonable expectation of success and with predictable results. The selection of something based on its known suitability for its intended use has been held to support a prima facie case of obviousness. *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945).

Claims 2-3: Takaoka teaches that the silver halide can be silver bromide [0010].

Claims 4-5: Takaoka teaches that the silver halide can contain rhodium, iridium, and palladium compounds [0009],[0011].

Claim 7: Takaoka teaches that the silver halide can have a diameter of .05 to 1.00 microns (i.e., 50 to 1000 nm).

Claim 9: Takaoka teaches that the sensitization layer can contain 90 wt% of the silver halide [0012] and that the silver metal can be formed in the exposed portions, as opposed to the unexposed portions [0007]. Therefore, the conversion to metal silver would necessarily form a layer having a metal silver content of 50 wt% or more.

Claims 12,27: Takaoka teaches that the physical development nuclei are only formed where the silver is to be formed (i.e., not in the light-transmitting portion of Marutsuka) [0004]. Thus, the light-transmitting portion does not substantially contain physical development nuclei.

Claim 21: Marutsuka teaches that the substrate can be a glass plate [0021].

Claims 22,26: Takaoka teaches that silver halide is removed from the unexposed regions of the silver salt-containing layer (abstract; [0005]-[0006]). The present specification teaches that the fixation step is performed for removing the silver salt from an unexposed portion for stabilization (pg. 31, lines 20-26). Thus, the removal of the silver halide of Takaoka is interpreted to be the claimed fixation step.

Claim 23: The silver halide is responsive to light (i.e., an optical sensor).

Claim 25: Takaoka teaches that the binder includes gelatin [0012].

Claim 31: Takaoka does not explicitly teach that the light-transmitting electromagnetic wave-shielding film has an aperture ratio of 85% or higher. However, the present specification shows in Comparative Sample 1 on pg. 53 that the invention of Takaoka produces an aperture ratio of 88%. Thus, such an aperture ratio is implicit in the Takaoka reference.

8. Claims 6, 9-10, 12, 21, 23, 25, 27-29, and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Marutsuka '279 in view of Deng et al. (U.S. Publication No. 2001/0045362) and Takaoka '773.

Marutsuka is discussed above, but does not explicitly teach that silver salt containing layer is exposed and developed to form a metal silver portion and the light-transmitting portion. However, Deng teaches a method of forming a patterned metal structure, wherein a silver halide

film is exposed and developed using photographic film techniques. Exposing the silver halide to the desired illumination configuration causes the illuminated or non-illuminated portions to be adjusted into an altered state. For example, the exposed or non-exposed portions of conventional silver halide photographic film can be changed to an elemental silver. The film can be exposed to a desired illumination configuration and the silver particles or grains will form in a higher density at the non-illuminated portions compared to the illuminated portions. The non-illuminated portions can then be further augmented using an electroless deposition of elemental silver [0030]. Because Deng teaches that it was well known to use silver halide in a photographic film technique to form patterned metal films, it would have been obvious to one of ordinary skill in the art at the time of invention to have formed the conductive patterned films of Marutsuka using the method of Deng with a reasonable expectation of success and with predictable results.

Deng teaches that the silver salt-containing layer comprises gelatin binder, but does not explicitly teach that the Ag/binder volume ratio can be 1/4 or higher. However, Takaoka teaches that it is operable to have 90 wt% of the silver halide in the silver-salt containing layer [0012]. The equivalent volume Ag/binder volume ratio is 0.645. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to have used a silver salt-containing layer having 90 wt% of the silver halide with a reasonable expectation of success because Deng teaches that such a range is operable in the art.

Claim 9: Deng teaches that silver can be concentrated at the exposed portions of the silver halide film and would necessarily contain metal silver at a content of 50 wt% or more.

Claim 10: Deng teaches that electroless plating can be performed on the exposed and developed film.

Claims 12,27: Deng teaches that the silver is concentrated at the portions where the silver film is to be formed (i.e., not in the light-transmitting portion of Marutsuka). Thus, the light-transmitting portion does not substantially contain physical development nuclei.

Claim 21: Marutsuka teaches that the substrate can be a glass plate [0021].

Claim 23: The silver halide is responsive to light (i.e., an optical sensor).

Claim 25: Deng teaches that the binder can be gelatin.

Claim 31: Takaoka does not explicitly teach that the light-transmitting electromagnetic wave-shielding film has an aperture ratio of 85% or higher. However, the present specification shows in Comparative Sample 1 on pg. 53 that the invention of Takaoka produces an aperture ratio of 88%. Thus, such an aperture ratio is implicit in the Takaoka reference.

9. Claims 8 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Marutsuka '279 in view of Takaoka '773 as applied to claim 6 above, and further in view of Poot et al. (U.S. Patent No. 3,989,522).

Claim 8: Marutsuka and Takaoka are discussed above, but do not explicitly teach that the developing solution is a lith developer. However, Poot teaches that it is well known to use lith developers for silver salt-containing layers (col. 5, lines 57-67). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to have used a lith developer as the particular developer of Takaoka with a reasonable expectation of success. The selection of something based on its known suitability for its intended use has been held to support a prima facie case of obviousness. *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945).

Claim 24: Marutsuka and Takaoka do not explicitly teach that the binder can be a water-soluble polymer. However, Poot teaches that water-soluble polymer binders are functional equivalents of gelatin binders of Takaoka. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to have substituted the gelatin binder of Takaoka for a water-soluble polymer binder of Poot with a reasonable expectation of success. Substitution of equivalents requires no express motivation (see MPEP 2144.06).

10. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Marutsuka '279 in view of Takaoka '773 as applied to claim 6 above, and further in view of Monroe (U.S. Patent 4,362,796).

Marutsuka and Takaoka are discussed above, but do not explicitly teach that more than half of the silver halide is converted to colloidal silver in the exposed portion. However, Takaoka teaches that the silver metal can be formed in the exposed portions, as opposed to the unexposed portions [0007]. Marutsuka and Takaoka make no indication that less than complete

conversion is desired, and it is understood in the art that the amount of conversion is a function of the amount of energy applied (Monroe, col. 4, lines 40-50). Therefore, the degree of conversion affects the amount of energy applied and/or time of application to the photoemulsion. It has been held that the discovery of the optimum value of a result effective variable in a known process is ordinarily within the skill in the art. *In re Boesch and Slaney*, 205 USPQ 215 (CCPA 1980). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have optimized the process for the optimum combination of desired conversion to expense and time of energy application.

11. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Marutsuka '279 in view of Takaoka '773 as applied to claim 6 above, and further in view of Deng '362.

Marutsuka and Takaoka are discussed above, but do not explicitly teach that the plating is done by electroless plating. However, Deng teaches a method of forming patterned conductive structures using silver halide photographic films and that it is well known to perform an electroless deposition on the silver layer after exposure and development steps [0029]-[0030]. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to have subjected the silver layer of Marutsuka and Takaoka to an electroless deposition process with a reasonable expectation of success and with predictable results because Deng teaches that such a deposition process is operable in the art.

12. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Marutsuka '279 in view of Takaoka '773 as applied to claim 6 above, and further in view of Hasegawa (U.S. Patent No. 4,631,214).

Marutsuka and Takaoka are discussed above, but do not explicitly teach that the electromagnetic shield is blackened after formation. However, Hasegawa teaches that it is advantageous in forming a metal grid comprising an electromagnetic shield for transparent parts to be blackened in order to prevent reflections (col. 5, lines 3-32). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have blackened the conductive metal portion of Marutsuka in order to have reduced reflection in the transparent electromagnetic shield.

13. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Marutsuka '279 in view of Takaoka '773 as applied to claim 6 above, and further in view of Glatkowski (U.S. Patent 7,060,241).

Marutsuka and Takaoka are discussed above, but do not explicitly teach that the shielding film has a surface resistance of $2.5 \Omega/\text{sq}$ or lower and/or the light-transmitting portion has a transmittance of 95% or higher. Marutsuka does teach that the transparent electromagnetic shielding is used for display devices (abstract).

Glatkowski teaches that electromagnetic shielding used for displays can have a surface resistance can be less than $100 \Omega/\text{sq}$ and a transmittance of at least 90% (col. 5, lines 24-67). The selection of something based on its known suitability for its intended use has been held to support a prima facie case of obviousness. *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945). Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to have made the transparent electromagnetic shielding of Marutsuka with the surface resistance and transmittance of Glatkowski with a reasonable expectation of success because Glatkowski teaches that such shielding property ranges are suitable in the art of electromagnetic shielding for displays.

14. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Marutsuka '279 in view of Deng '362 and Takaoka '773 as applied to claim 6 above, and further in view of Glatkowski '241 for substantially the same reasons as discussed immediately above.

Double Patenting

15. Applicant is advised that should claim 27 be found allowable, claim 12 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

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16. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

17. Claims 2-7, 9, 12-13, 21-23, 25-29, and 31 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-6 of copending Application No. 11/159218 in view of Takaoka ‘773.

‘218 does not require a binder, wherein the Ag/binder volume ratio is 1/4 or higher. However, Takaoka teaches that the silver halide can be 90 wt% relative to the binder. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to have used the Ag/binder ratios of Takaoka with a reasonable expectation of success and with predictable results.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

18. Claims 8 and 24 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-6 of copending Application No. 11/159218 in view of Takaoka ‘773 and Poot ‘522.

'218 does not require a lith developer or a binder including water-soluble polymers. However, Poot teaches that such modifications would have been to one of ordinary skill in the art as discussed above.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

19. Claim 10 provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-6 of copending Application No. 11/159218 in view of Takaoka '773 and Deng '362.

'218 does not require electroless plating. However, Deng teaches that such a modification would have been obvious to one of ordinary skill in the art as discussed above.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

20. Claim 11 provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-6 of copending Application No. 11/159218 in view of Takaoka '773 and Hasegawa '214.

'218 does not require a blackening treatment. However, Hasegawa teaches that such a modification would have been obvious to one of ordinary skill as discussed above.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Response to Arguments

21. Applicant's arguments filed 3/27/2008 have been fully considered but they are not persuasive. Examiner maintains his position in the advisory action filed 4/11/2008.

22. Applicant's arguments filed 5/22/2008 have been fully considered but they are not persuasive.

Applicant argue on pg. 2 that Ag/binder volume ratio as taught in Takaoka is 1/6. However, the calculation is only based on the Example, wherein the solution contained 70 wt%

silver chloride and 30 wt% gelatin binder. Takaoka teaches a broader range in the disclosure of a silver halide in the amount of 10 wt% to 90 wt%. Disclosed examples and preferred embodiments do not constitute a teaching away from a broader disclosure or nonpreferred embodiments (In re Susi, 440 F.2d 442, 169 USPQ 423 (CCPA 1971)). A reference may be relied upon for all that it would have reasonably suggested to one having ordinary skill in the art, including nonpreferred embodiments. Merck & Co. v. Biocraft Laboratories, 874 F.2d 804, 10 USPQ2d 1843 (Fed. Cir.), cert. denied, 493 U.S. 975 (1989). See also Celeritas Technologies Ltd. v. Rockwell International Corp., 150 F.3d 1354, 1361, 47 USPQ2d 1516, 1522-23 (Fed. Cir. 1998). Takaoka reasonably and explicitly suggests that the silver halide can be present in the amount of 90 wt%. The calculation of Ag/binder volume ratio is as follows:

$$[90 \times (107.868 / 143.32) (1 / 10.5 \text{ g/cm}^3)] / [10 \times (1 / 1 \text{ g/cm}^3)] = 6.45 / 10 = 0.645$$

The ratio of .645 meets the limitations of claims 6, 28, and 29 because 0.645 is larger than $\frac{1}{4}$ (or 0.25), $\frac{1}{3}$ (or 0.33), and $\frac{1}{2}$ (or 0.5).

Allowable Subject Matter

23. Claim 30 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

24. The following is a statement of reasons for the indication of allowable subject matter: the prior art of record do not reasonably teach or suggest a Ag/binder ratio of 1/1 or higher for the silver salt-containing layer in combination with the other limitations of the claim. Table 3 on pg. 56 of the present specification shows that higher Ag/binder ratios produce lower surface resistance and higher conductivity.

Conclusion

25. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Postupack (U.S. Patent No. 4,845,310) teaches a method of exposure and development to form a colloidal silver film from a silver salt (col. 5, lines 12-19).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jimmy Lin whose telephone number is (571)272-8902. The examiner can normally be reached on Monday thru Friday 8AM - 5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tim Meeks can be reached on 571-272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Jimmy Lin/
Examiner, Art Unit 1792

/Timothy H Meeks/
Supervisory Patent Examiner, Art Unit
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